

## REMARKS

Claims 1-24 are pending in this application. Further examination of the present application is hereby requested in view of the following remarks. Applicants believe that the present application is now in condition for allowance and prompt and favorable action is respectfully solicited.

### **35 U.S.C. § 103 Rejections**

**1. Claims 1-4, 7-10, 13-16 and 19-22 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kallin et al., U.S. Patent No. 6,058,308 (“Kallin”) in view of Ho et al., U.S. Patent No. 5,943,621, (“Ho”), and further in view of Funato et al., U.S. Application Publication No. 2003/0143999 (“Funato”).**

#### **a. Independent claims 1, 7, 13 and 19**

A claim is obvious only when the subject matter of that claim as a whole would have been obvious to a person having ordinary skill in the art. 35 U.S.C. §103(a). Here, all of the claims include the element that the target mobile station (MS), after registering when a number of cells identified in a first list is equal to a predetermined limit, move the cells identified in the first list, other than a cell in which the MS last registered, to a second list. The applied references do not teach or suggest this aspect of the claimed subject matter. In attempting to account for this missing claim limitation, the Examiner newly states in the “Response To Arguments” section of the final Office action:

In the combination of Kallin, Ho, and Funato, the cell for which the mobile registers with is maintained, as taught by Ho, and the removed cell IDs are moved into a previous location table, as taught by Funato, therefore teaching the aforementioned limitations.

FR, page 6. The Examiner’s position lacks logic and support in the three applied references.

Kallin describes a system and method for adaptively selecting a paging area in which to page a mobile device. Kallin indicates that the last cell where each mobile terminal 18 was located is stored in storage element 72. See *id.*, column 9, lines 11-15 and Fig. 2. The adaptive method of Kallin involves the use of paging area selector 92, granularity selector 72 and the records stored at storage element 72 of the “cell in which the mobile terminal to be paged was last-accessed by such mobile terminal.” *Id.*, column 10, lines 50-54.

Ho describes a system and method of tracking mobile stations where the path of travel of the mobile station is monitored for the presence of loops. When identified, a loop is removed from the path. The length of the path is compared with a threshold value and if the length is greater than or equal to the threshold value, the mobile station performs a location update. *Id.*, column 2, line 63-column 3, line 7. The threshold value in Ho is adaptively determined using a movement counter (MC) and call counter (CC) *Id.*, column 5, line 53- column 6, line 4. Cell IDs are used in Ho as described in column 6, line 49-column 7, line 26, in that, upon a location update by the mobile station 300, “all cell IDs are removed from the movement history register except for the cell ID of the current cell.” See also column 5, lines 5-20. Thus, Ho describes removing all cell IDs but for the current cell ID and **does not** describe moving cells identified in a first list, other than a cell in which the mobile station last registered to a second list.

When Kallin and Ho are viewed together, it is seen that Kallin describes an adaptive technology for paging mobile telecommunication devices while Ho describes an adaptive technology for tracking mobile telecommunication devices. Kallin takes advantage of the “probability that the mobile terminal is located at a position at which the mobile terminal was previously positioned when last-accessing the cellular network.” *Id.*, col. 8, lines 35-41. Thus, the adaptive technology of Kallin needs only to “maintain a record indicative of the cell in which

a mobile terminal was located when last-accessing the cellular network. *Id.*, column 8, lines 42-46. Ho on the other hand describes an “improved location scheme,” *id.*, column 8, lines 36-49, where the cell location of a mobile telecommunication device is reported based upon a loop removal technique that includes multiple previous locations of the device.

The Examiner asserts that it would have been obvious to modify Kallin using Ho to “limit the number of stored cell IDs as a mobile moves through a network, as taught by Ho, in order to significantly reduce unnecessary location updates occurring in known movement-based schemes and reduce signaling overhead due to location management.” FR, page 4. Missing from the Examiner’s analysis is that Kallin adaptively optimizes paging resources based upon knowledge of the last reported cell location of a mobile telecommunication device. It does not appear that Kallin stores any cell IDs except for the cell where the mobile device last accessed the network. See, e.g., Kallin, column 9, lines 11-15 (“an indication of the cell in which each mobile terminal was located when last-accessing the cellular network is thereby stored in the storage element 72”). Thus, there does not appear to be a storage “problem” in Kallin as asserted by the Examiner that needs to be addressed. Furthermore, Ho does not report the current location of a mobile telecommunication device in real time, but rather stores that information at the mobile station until a threshold value is reached and then removes cell locations as part of its loop removing process. Thus, the two references are working against each other.

Even if, *arguendo*, Kallin and Ho are properly combined, a point not conceded, they do not describe moving cells identified in a first list, other than a cell in which the mobile station last registered to a second list. The Examiner relies upon Funato for this aspect of the claimed subject matter. Funato describes a system and method for distributed dynamic paging where

paging areas reconfigure themselves according to changes in movement of mobile hosts. *Id.*, Abstract. The Examiner continues to rely upon Funato as teaching “moving the cells identified in a first list [CLT] other than cell in which the MS last registered, to a second list [PLT],” citing Funato, pages 5-6, paragraph [0088]. FR, page 4. However, as previously argued, the cited portion of Funato does not support the Examiner’s fact finding.

The relied upon portion of Funato reads:

[0088] FIG. 20 is an operational block diagram of the host reporter agent (HRA) 908 in a MH 902 (FIG. 9). The HRA includes a reporter process (REPF) 2002, and a previous location table (PLT) 2004 and a current location table (CLT) 2006. As the MH travels, the REPF 2002 updates the both PLT 2004 and CLT 2006 and registers the MH with a new area. The reporter process 2002 reports paging area movement to the current paging area clustering agent. As is indicated in FIG. 20, the PLT 2004 stores the paging identifier (PID) and the network access identifier (NAI) for the previous paging area clustering agent. Similarly, the CLT 2006 stores the paging identifier (PID) and the network access identifier (NAI) for the current paging area clustering agent. When the MH moves to another paging area, the reporter process 2002 moves the current location table 2006 information to the previous location table 2004.

As seen, upon registration in a new paging area, the MH (MS of the present claims) of Funato moves the current location table [CLT] (first list of the present claims) to the previous location table [PLT] (second list of the present claims). There is no disclosure in the relied upon passage of Funato that the cell in which the MH last registered is retained in the CLT as stated in the present claims. Rather, the last registered cell--the CLT of Funato--is moved to the PLT.

The Examiner has “clarified” in responding to the previous arguments how Funato allegedly teaches the claim limitation the MS having moved the cells identified in the first list, other than a cell in which the MS last registered, to a second list. Tellingly the Examiner implicitly admits that Funato does not teach this limitation, stating “[i]n the combination of Kallin, Ho, and Funato, the cell for which the mobile registers with is maintained as taught by Ho, and the removed cell IDs are moved into a previous location table, as taught by Funato,

therefore teaching the aforementioned limitations.” FR, page 6. In postulating this new theory of the rejection, the Examiner explains it would have allegedly been obvious to “modify the combination of Kallin and Ho to include moving the cells removed from the movement history stack to a second list, as taught by Funato, in order to maintain a movement history log and further distinguish between an active cell and a previously visited cell.” FR, page 4. The Examiner further explains that maintaining such a movement history log, purportedly in “accordance with Funato, will define a “minimum paging area...that takes consideration of a mobile station.” *Id.* The Examiner concludes, “it is obvious to a skilled artisan that a movement history log can be utilized by the network for functions such as billing or for forwarding data in an IP network.” *Id.*

The Examiner’s “movement history log” theory is blatant hindsight. None of the applied references are concerned with billing. Nor has the Examiner explained where any of the references describe as part of their respective inventions concern regarding forwarding data in an IP network. Just the strained nature of the Examiner’s new explanation of the proposed combination of references conveys the hindsight nature of the rejection. The Examiner first proposes to modify Kallin on the basis of Ho, which as explained above is not suggested by Kallin and Ho, then proposes to modify the modified version of Kallin based upon Ho by Funato. Since none of the three references teach or suggest the MS having moved the cells identified in the first list, other than a cell in which the MS last registered, to a second list as required by the present claims, the Examiner is forced to invent a so-called motivation based upon a movement history to be used for purposes not taught or suggested by the three references.

Viewing Kallin, Ho and Funato together without knowledge of the present disclosure and claims as one must in making an obviousness determination, it is readily seen there is no reason

to combine the references as proposed by the Examiner. The Examiner cites *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). FR, page 7. However, as explained in that case, it is improper for the Examiner to rely upon an applicant's disclosure and claims in formulating an obviousness rejection. Here, the so-called motivation newly relied upon by the Examiner finds no factual support in the references. Thus, the only apparent basis for combining the prior art disclosures is the present Applicants' disclosure and claims. This amounts to impermissible hindsight.

**b. Dependent claims 3, 4, 8-10, 14-16 and 20-22**

These claims depend either directly or indirectly from one of the independent claims, and include all the subject matter of, claims 1, 7, 13 and 19, and should be allowed for at least the same reasons presented above regarding the independent claims as well as the additionally recited features found in the claims. Because independent claims 1, 7, 13 and 19 are believed to be allowable, Applicants have not argued or otherwise relied on independent patentability of dependent claims, but reserves the right to do so in this or any subsequent proceeding.

**2. Claims 5, 6, 11, 12, 17, 18 23 and 24 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kallin, Ho, Funato and Papadimitriou et al., U.S. Application Publication No. 2002/0187793 ("Papadimitriou")**

These claims depend either directly or indirectly from one of the independent claims, and include all the subject matter of, claims 1, 7, 13 and 19, and should be allowed for at least the same reasons presented above regarding the independent claims as well as the additionally recited features found in the claims. Because independent claims 1, 7, 13 and 19 are believed to be allowable, Applicants have not argued or otherwise relied on independent patentability of dependent claims, but reserves the right to do so in this or any subsequent proceeding.

## CONCLUSION

In light of the remarks contained herein, Applicants submit that the application is in condition for allowance, which is hereby requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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